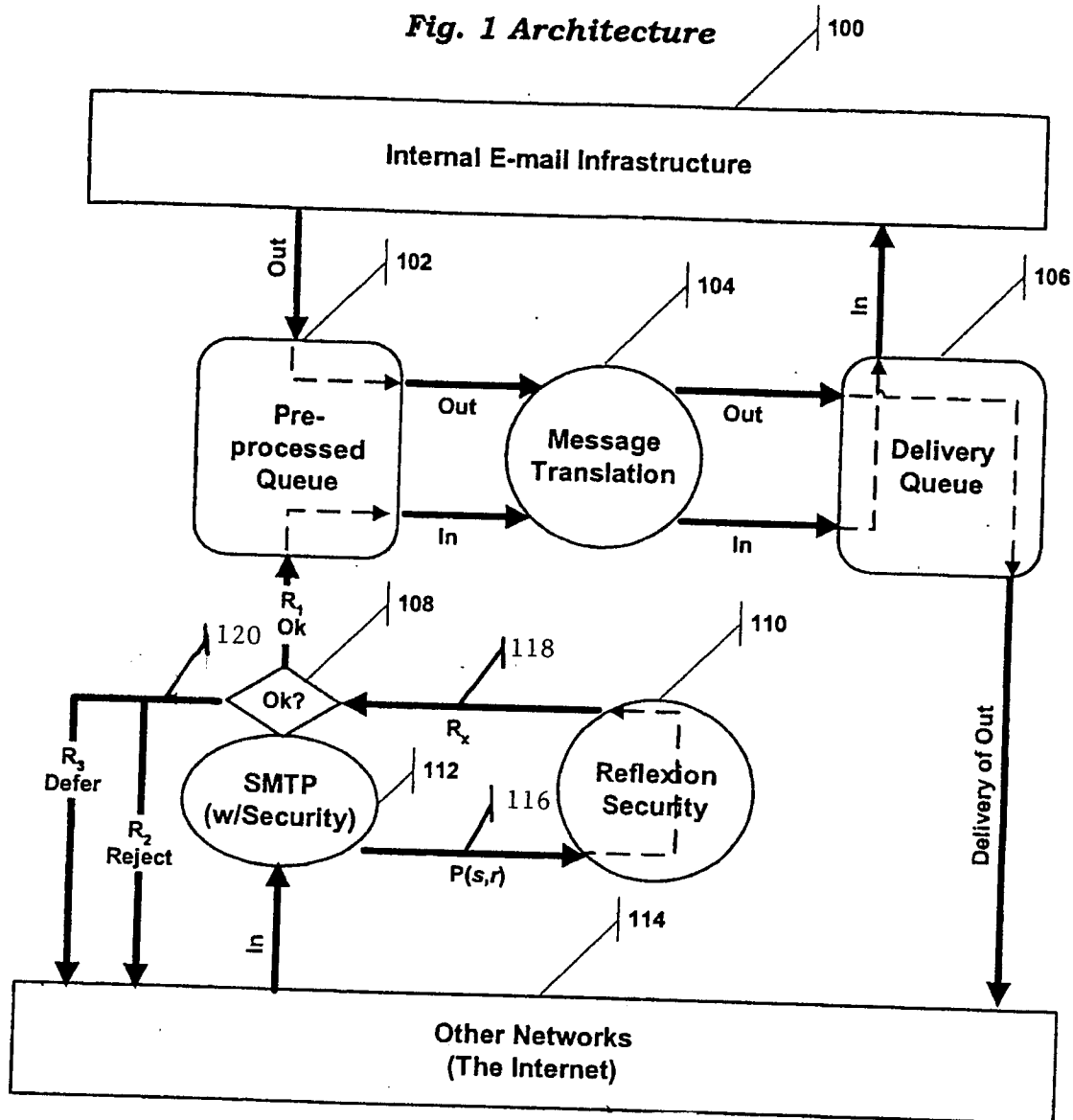
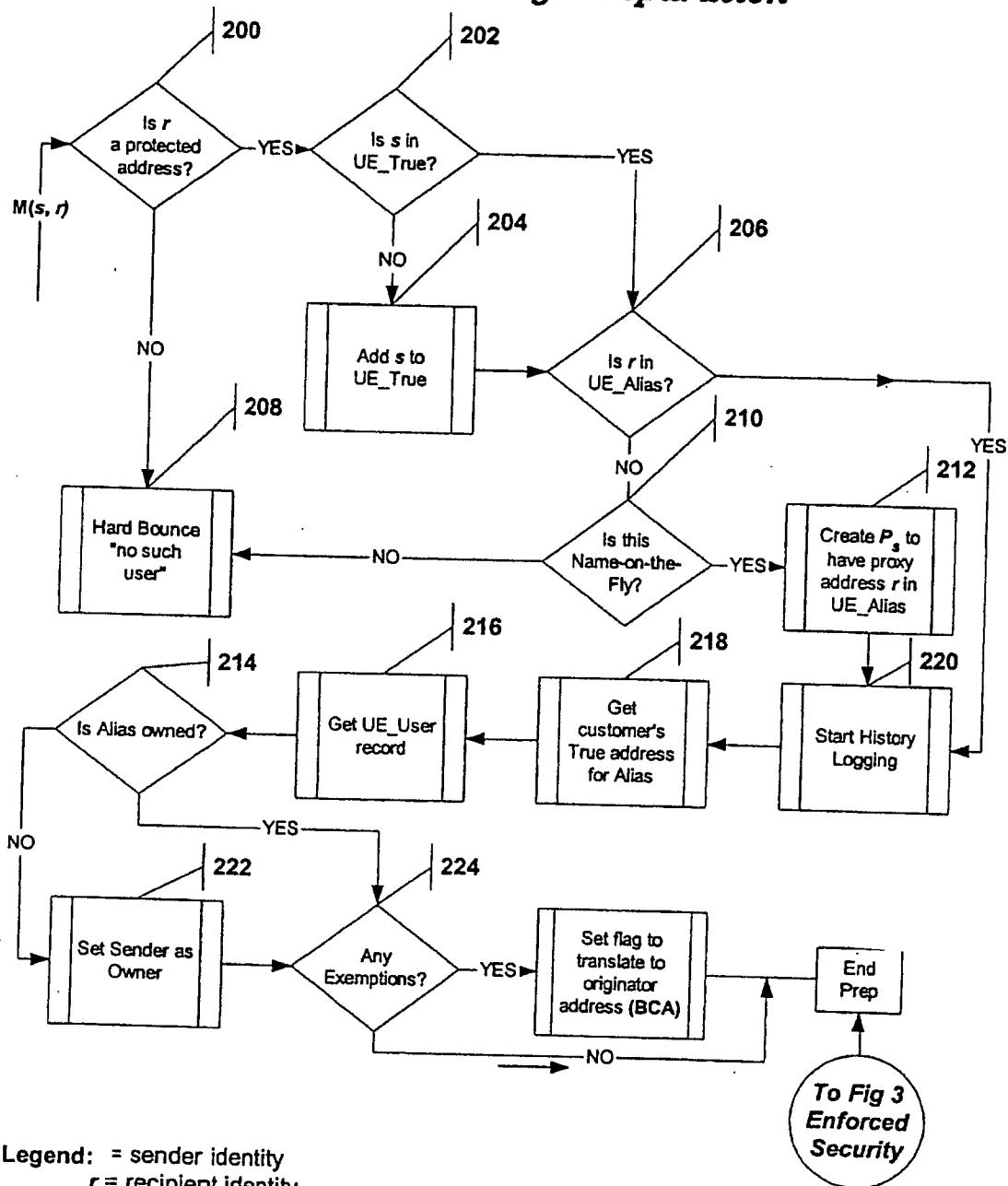


Fig. 1 Architecture



Legend: s = sender identity
 r = recipient identity
 $P(s,r)$ = Request security status on a message from s to r
 R_x = Security status on a message from s to r
 R_1 = Ok, continue processing message
 R_2 = Reject, do not process the message
 R_3 = Defer, temporarily defer the message back to the sending server

Fig. 2 Inbound Message Preparation



Legend: s = sender identity

r = recipient identity

$M(s, r)$ = A message from s to r

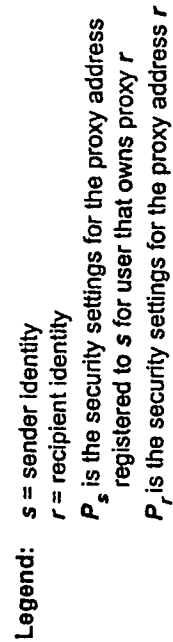
UE_TRUE is a database table containing "real" (i.e. non-proxy) addresses

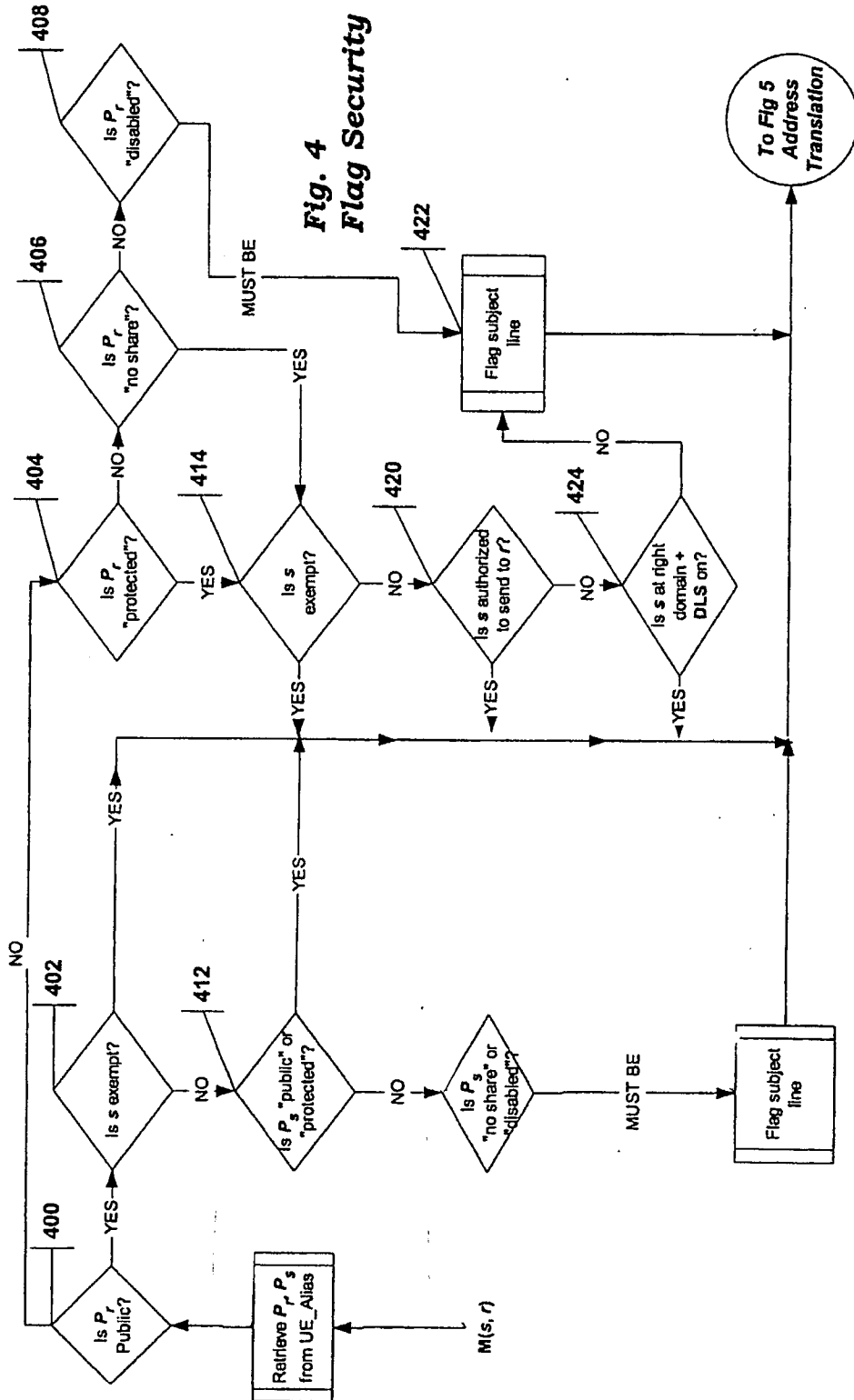
UE_ALIAS is a database table containing proxy addresses

UE_User is a database table containing user information

BCA = "Business Card Address", the originator address managed by the internal mail transport agent (i. e. mail server)

P_s is the security settings for the proxy address registered to s for user that owns originator address to which proxy r is a substitute

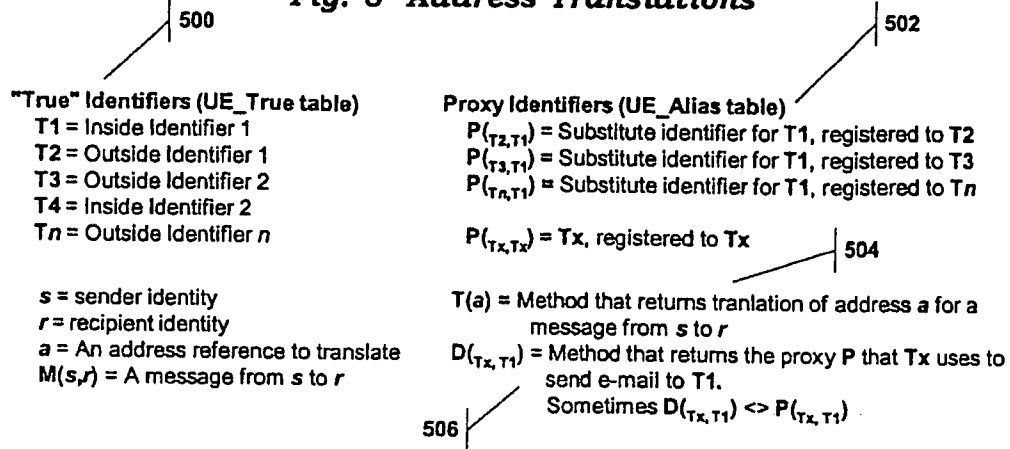




Legend:
 s = sender identity
 r = recipient identity
 P_s is the security settings for the proxy address registered to s for user that owns proxy r
 P_r is the security settings for the proxy address r

$M(s,r)$ = A message from s to r
 UE_Alias is a database table containing proxy addresses
 DLS stands for Domain Level Sharing
 Note: It is possible for P_s to be the same object as P_r

Fig. 5 Address Translations



INBOUND, successfully past security, where:

1. $a = r, s = T2, r = P_{(T2, T1)}$, then $T(a) = T1$
2. $a = r, s = T2, r = P_{(T3, T1)}$, then $T(a) = T1$
3. $a = P_{(T4, T4)}, s = T2, r = P_{(T2, T1)}$, then $T(a) = T4$
4. $a = P_{(T4, T4)}, s = T2, r = P_{(T3, T1)}$, then $T(a) = T4$
5. $a = T3, s = T2, r = P_{(Tx, T1)}$, then $T(a) = T3$
6. $a = P_{(Tx, Ty)}, s = T2, T2$ is exempt, $r = \text{any } P$, then $T(a) = Ty$

OUTBOUND, no security on outbound, where:

7. $a = r, s = T1, r = T2$, then $T(a) = P_{(T2, T1)}$
8. $a = r, s = T1, r = T2, D_{(T2, T1)} \neq P_{(T2, T1)}$, then $T(a) = D_{(T2, T1)}$
9. $a = r, s = T1, r = T2, D_{(T2, T1)} = P_{(T2, T1)}$, then $T(a) = P_{(T2, T1)}$
10. $a = r, s = T1, r = T2, r$ is exempt, then $T(a) = P_{(T1, T1)} [s]$
11. $a = T3, s = T1, r = T2$, then $T(a) = P_{(T3, T1)}$
12. $a = T3, s = T1, r = T2, D_{(T3, T1)} \neq P_{(T3, T1)}$, then $T(a) = D_{(T3, T1)}$
13. $a = T3, s = T1, r = T2, D_{(T1, T2)} = P_{(T2, T1)}$, then $T(a) = P_{(T3, T1)}$
14. $a = T3, s = T1, r = T2, T3$ is exempt, then $T(a) = P_{(T1, T1)} [s]$